RECEIVED
CENTRAL FAX CENTER
OCT 23 2006

IN THE CLAIMS

1. (currently amended) In a~~A~~ method for producing a silicon-on-insulator structure including hydrogen implantation in a silicon wafer, chemical treatment of the ~~silicon~~ wafer and a substrate, joining of the ~~silicon~~ wafer and substrate, splicing and splitting of the wafer along a layer of the implanted ~~layer~~ hydrogen, ~~characterized in that~~ the improvements wherein:

~~a~~at least drying; and removing of ~~the of~~ physically adsorbed substances from the surfaces of the wafers and substrate after the chemical treatment is carried out in ~~the~~ a first low vacuum ~~conditions~~ at ~~the~~ a first moderate temperatures ~~at which~~ such that the implanted hydrogen ~~is stayings in the in the~~ bound ~~state;~~ and

the joining and splicing of the wafer and substrate~~, their splicing~~ and exfoliating ~~hydrogen induced transferring~~ along the ~~implanted~~ layer ~~in the wafer in the same~~ of implanted hydrogen is carried out at a second low vacuum ~~conditions at~~ and a second moderate temperature the same as or slightly higher than the first moderate temperatures ~~at which~~ such that the implanted hydrogen ~~is~~ mostly stayings ~~mostly in the~~ bound ~~state~~.

2. (currently amended) The method according to claim1, characterized in that the hydrogen implantation is carried out through thermally grown oxide SiO_2 with ~~the~~ a thickness of 5 to 50 nm ~~and following it is removed after implantation~~.

3. (currently amended) The method according to claim 1,characterized in that the hydrogen implantation is carried out with H_2^+ or H^+ ions with doses from ~~(~~1.5 to 15~~)~~$\times 10^{16}$ cm^{-2} and energies 20 to 200 keV, respectively.

4. (currently amended) The method according to claim 1, characterized in that a thermal annealing is carried out at 1100°C during 0.5 to1 hour after the splitting.

5. (currently amended) The method according to claim 1, ~~characterized in that~~ further comprising a touch chemical-mechanical polishing (CMP) or thermal oxidation with following chemical etching ~~in~~ with diluted hydrofluoric acid ~~are carried out~~ for removing ~~of~~ an upper rough layer ~~on the surface of~~ after the exfoliating~~ed silicon film~~.

6. (currently amended) The method according to claim1, characterized in that ~~the~~ a thickness of thermally grown oxide SiO_2 ~~with~~ on the substrate is ~~equal to~~ 0.01 to 3 μm.

7. (currently amended) The method according to claim 1, characterized in that the substrate is a glass ~~wafer with the~~ a thickness about 500 μm.

8. (currently amended) The method according to claim 1, characterized in that the substrate is ~~a~~ gquartz ~~wafer~~ with a thickness about 500 μm.

9. (currently amended) The method according to claim 1, ~~characterized in that the drying, removing of the of physically adsorbed substances from the surfaces of the wafer and substrate, joining the wafer and substrate, their splicing and exfoliating along the implanted layer in the wafer at~~ wherein at least one of the first and second temperatures is 80 to 350°C with duration from 0.1 to 100 hours ~~are carried out in~~ and at least one of the first and second

low vacuums is ~~conditions (~~101 to 104 Pa~~)~~.

10. (new) The method according to claim 1, wherein at least one of the first low vacuum or temperature is the same as the second low vacuum or temperature.

11. (new) The method according to claim 9, wherein at least one of the first low vacuum or temperature is the same as the second low vacuum or temperature.